Ministry of Trade, Industry and Tourism

Survey of fuel retail prices and exchange rates in Hargeisa

Final Report (draft version)

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1. Introduction

In light of the present COVID-19 crisis, Somaliland's Ministry of Trade, Industry and Tourism (MoTIT) has taken the initiative to monitor the evolution of fuel retail prices and exchange rates. The price of fuel in international markets has plunged in the past months due to the virus-driven crisis. Somaliland is dependent on fuel imports for energy supply and the decrease in global fuel prices is likely to impact the country's economy and employment. Consequently, it is essential to pay close attention to how the change in global fuel prices affects Somaliland's economy. In addition to prices, the MoTIT considered relevant to analyse the exchange rates applied by fuel retailers.

To this aim, the Ministry developed a pilot survey of Hargeisa's fuel stations, in which interviewees were asked to share information about the retail price of petrol, diesel, and kerosene. Prices were reported in both Somaliland Shilling (SLSH) and US Dollars (USD), so as to determine the extent to which exchange rates are arbitrarily modified by fuel stations. The results expected are twofold: first, to understand the difference between these products' prices and exchange rates, and how they vary across Hargeisa's districts and fuel stations. Second, to monitor the evolution of prices and exchange rates throughout time.

The population of the survey are all fuel stations in Hargeisa. The survey followed a non-parametric sampling method, namely purposive sampling. Two survey rounds were conducted, 96 fuel stations in 7 districts were interviewed in the first round. 24 fuel stations in 2 districts were interviewed the second round. Given the methodology used, the results of this survey are not representative but indicative. Yet, it is considered the survey provides valuables insights into the state and evolution of fuel prices and exchange rates in Hargeisa.

This document presents the main survey findings and is structured as follows. The next section explains the background and objectives of the survey. Section 3 provides details about the methodology. Section 4 presents the results of the survey. Section 5 summarises the main points.

2. Background and objectives

The COVID-19 crisis is dramatically affecting economies around the globe. At the moment of writing, the pandemic has its epicentre in Europe and the United States. The slowdown in economic activity in these two economic powers is already impacting developing countries, not least through a severe drop in final demand for certain products. Many African countries are net exporters of agricultural commodities and/or fuel, and are consequently being hard hit. The reduction in China's manufacturing activity has similarly been a cause of concern for developing countries.

Within this context, global fuel prices have plummeted in the past month; between 21 February and 20 March, crude oil prices decreased from 58 US$/bbl. to 26 US$/bbl. and petrol prices from 165 US$/gal. to 60 US$/gal[1]. This change in fuel prices is likely to have both supply- and demand-side effects. On the supply side, income is expected to be lost at each stage of the value chain. This will affect exporters of crude oil as well as refineries. At the other end of the value chain, retailers might also see their profit margins cut. On the demand side, the reduction in import prices implies a reduction in production costs, which

[1] Bloomberg Indexes

could translate into higher (price) competitiveness due to the opportunity to lower retail prices[2].

Somaliland is dependent on oil imports for domestic energy supply. There currently are 7 large fuel importation companies; (i) Indhabirta, (ii) Sompetrol, (iii) Hass, (iv) Redsea, (v) Tayo, (vi) Warabo, and (vii) Liban. These fuel importers sell to fuel stations and energy companies. Fuel stations sell fuel products (petrol, diesel, and kerosene) to final consumers, who generally use petrol and diesel to run their automobiles, and kerosene as lamp oil and for cooking purposes. The reduction in fuel prices can have important consequences for fuel stations through reduced profit margins, although depending on the ability of fuel stations to set retail prices, it can also increase their profits.

Data collected by the MoTIT Berbera Oil Terminal Unit indicate that fuel import prices decreased from 135US$/bbl. to 108US$/bbl. for petrol, and from 118US$/bbl. to 105US$/bbl. for diesel in one month (February to March). This corresponds to a monthly reduction of petrol and diesel prices of 23% and 11% respectively (Table 1), which is in stark contrast to February's headline and energy monthly inflation rates, at 0.6% and 0.1% each[3].

Table 1. Monthly fuel import prices

	January	February	March	Change (February-March)
Petrol (USD/bbl.)	135	142	108	-23.9%
Diesel (USD/bbl.)	115	118	105	-11%

Source: Berbera Oil Terminal, MoTIT

In relation to the latter, the Ministry of Planning and National Development issues a monthly inflation report that monitors the evolution of food, non-food, and energy prices in Somaliland. However, the fast-paced nature of the COVID-19 crisis requires quicker updates of the evolution of prices and particularly fuel prices. The present survey was developed in an attempt to respond to this need and complements the results of the aforementioned monthly inflation reports.

Within this context, this survey has two main objectives:

1. Provide baseline information about fuel prices and exchange rates in Hargeisa.
   - What is the average price of petrol, diesel and kerosene?
   - Is there a wide fluctuation in fuel prices across Hargeisa's fuel stations?
   - Are there important differences in fuel prices between districts?
   - What exchange rates are fuel stations using and are these aligned with current market exchange rates?
2. Inform about the potential change in fuel retail prices and exchange rates in Hargeisa.
   - How did prices change between survey rounds 1 and 2?
   - How did exchange rates change between survey rounds 1 and 2?

3. Methodology

The design of the survey sample followed a non-probabilistic method, namely purposive sampling. The rationale behind choosing non-probabilistic sampling was the unavailability of

[2] These logical inferences are contingent on the markets' structure and the extent to which lower input prices translate into lower output prices.
[3] Central Statistics Department, Ministry of Planning and Development

a sampling frame due to lack of information about the survey's population (ie. all fuel stations in Hargeisa). Consequently, purposive sampling was used and the targeted units were large fuel stations in Hargeisa. Large fuel stations were selected given these represent a larger market share, thus have greater influence on the retail price of fuel and its fluctuation in response to changes in import prices.

The survey was undertaken in two rounds. Round 1 took place between 10 March and 19 March and aimed at addressing the first objective of the survey, namely providing information about fuel retail prices and exchange rates and understanding their differences across Hargeisa's districts and fuel stations. This survey round consisted of 96 interviews in 7 districts: 26 June, Ahmed Dhagax, Ahmed Macallin, Gacan Libaax, Ibraahim Koodbuur, Maxamed Mooge, Maxamuud Haybe. With the objective of monitoring price and exchange rate fluctuations, Survey Round 2 consisted of 24 interviews, conducted three weeks later (8 and 9 April). Two districts (Ahmed Macallin and Gacan Libaax) were selected for monitoring price and exchange rate fluctuations, thus results apply to fuel stations in these districts only. Due to the low number of fuel stations selling kerosene in the two selected districts, the analysis of kerosene prices' and exchange rates' changes was omitted.

The questionnaire was designed using the Computer Assisted Personal Interviews (CAPI) software KoBo Toolbox, and consisted of basic questions regarding the retail price of diesel, petrol, and kerosene, both in SLSH and USD. The electronic collection of data through KoBo Toolbox allowed for a more efficient data entry and management process. This, combined with the simplicity of the questionnaire, has allowed the MoTIT to publish the results of the survey in a relatively short period of time.

The data were cleaned and analysed using Excel and STATA. Due to the nature of non-probability sampling, the results presented here are not representative of the survey's population (ie. all fuel stations in Hargeisa) but rather indicative. Therefore, the analysis is limited to describing the data samples through descriptive statistics. In order to improve the quality of the sample, Survey Round 2 slightly increased the number of respondents from Ahmed Macallin and Gacan Libaax districts compared to the number of respondents from these districts in Round 1. Since neither of these sub-samples is strictly representative of their district, their comparison should again be treated as indicative. Albeit not generalisable, the survey's results are considered to provide valuable insights into the state and evolution of fuel retail prices in Hargeisa.

4. Results

4.1. Baseline data on prices and exchange rates

This section is based on Survey Round 1, undertaken in mid-March and including information about prices and exchange rates of petrol, diesel and kerosene in 7 districts of Hargeisa.

4.1.1. Prices

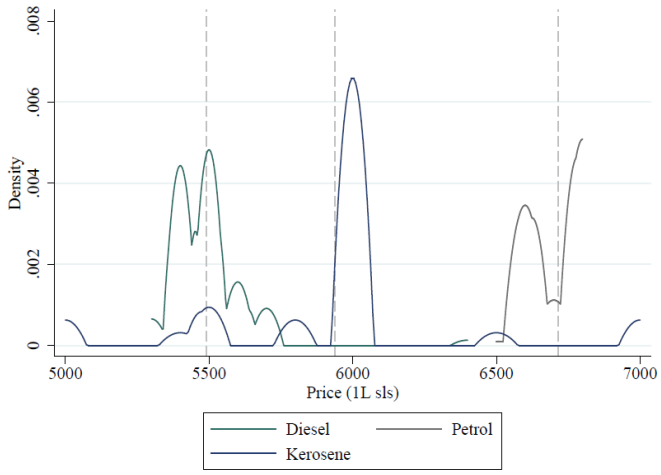
Table 2 below shows the main descriptive statistics for petrol, diesel, and kerosene prices. The average prices of petrol, diesel and kerosene are 6700, 5500, and 5900 SLSH/L respectively. Thus, the average price of petrol is 1200 SLSH/L more expensive than the average price of diesel, and 800 SLSH/L more expensive than that of kerosene. Kerosene prices span through a wider range, from 5000 SLSH/L to 7000 SLSH/L. The difference between maximum and minimum prices is of 1100 SLSH/L for diesel and only 300 SLSH/L

for petrol. Kerosene prices have a higher variance than the other two, while petrol prices have the lowest (Figure 1).

Table 2. Summary statistics of price variables. Petrol, diesel and kerosene. Round 1.

	observations	mean	standard dev.	min	max
Petrol	96	6714.6	95.1	6500	6800
Diesel	96	5490.6	135.4	5300	6400
Kerosene	32	5937.5	414.1	5000	7000

Figure 1. Kernel density plot of petrol diesel and kerosene prices. Round 1.



Prices by district

Figures 2 and 3 show the distribution of each price variable by district. Figure 2 suggests that the price level is relatively homogeneous across all districts, especially regarding petrol prices. Ahmed Macallin district has relatively lower diesel prices than the rest, while 26 June district presents the highest diesel price levels. In contrast, the lowest petrol prices can be found in the Gacan Libaax district. With respect to kerosene prices, the district 26 June has the lowest price levels, while higher prices are present in the Maxamuud Haybe district[4].

Figure 3. Box plot of petrol and diesel prices by district. Round 1.

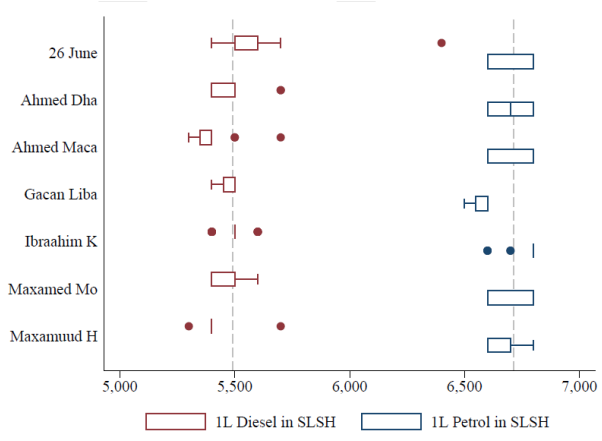
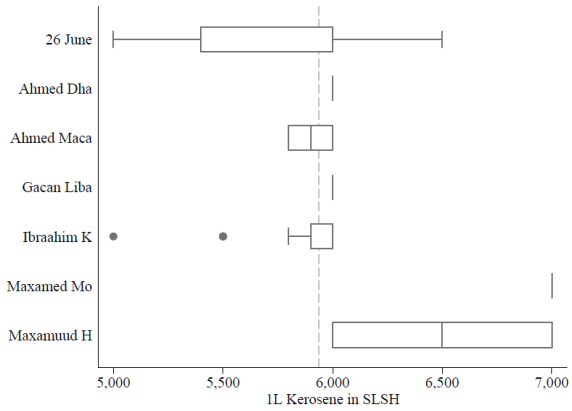


Figure 2. Box plot of kerosene prices by district. Round 1.



[4] The number of fuel stations selling kerosene in the sample is concentrated in the Ibraahim Koodbuur and 26 June districts, which together represent 77% of all kerosene-selling fuel stations. Thus, further evidence is needed to draw district-specific conclusions for kerosene prices and exchange rates beyond these two districts.

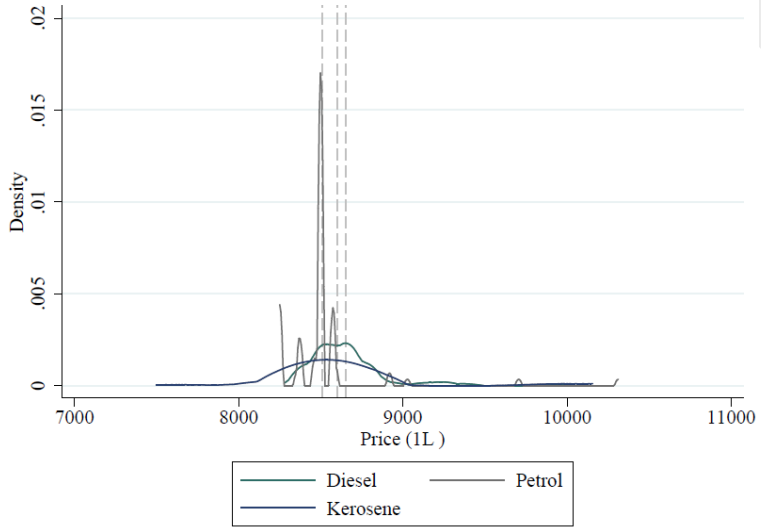
4.1.2. Exchange Rates

Table 3 and Figure 4 show the main descriptive statistics and a kernel density plot for petrol, diesel and kerosene exchange rates. The exchange rates applied to these products are very close to the market exchange rate (1 USD = 8500 SLSH). Petrol and diesel exchange rates have a similar dispersion levels, as well as similar minimum and maximum values. Kerosene exchange rates present a wider variation, with minimum values 700 SLSH/USD lower than those of petrol and diesel.

Table 2. Summary statistics of exchange rates. Petrol, diesel and kerosene. Round 1

	observations	mean	standard dev.	min	max
Petrol	96	8508.9	259.8	8250.0	10312.5
Diesel	88	8650.6	244.8	8281.3	10000.0
Kerosene	30	8603.5	452.5	7500.0	10156.3

Figure 4. Kernel density plot of petrol, diesel and kerosene exchange rates. Round 1.



Exchange Rates by district

Figures 5 and 6 show the exchange rates' distribution by district. As already pointed out in Table 4, petrol and diesel exchange rates have a similar mean value. However, the graph below shows there are important within-district differences in the exchange rates applied to petrol and diesel products, not least in the Moxamed Mooge and Ahmed Macallin districts. In addition, further evidence not displayed here for simplicity indicates that fuel stations are applying different exchange rates to their petrol and diesel products. This is rare and requires further insights on fuel stations' pricing structures. In relation to kerosene, exchange rates vary widely in the 26 June district and are more concentrated in the Ibrahim Koodbuur district.

Figure 5. Box plot of petrol and diesel exchange rates by district. Round 1

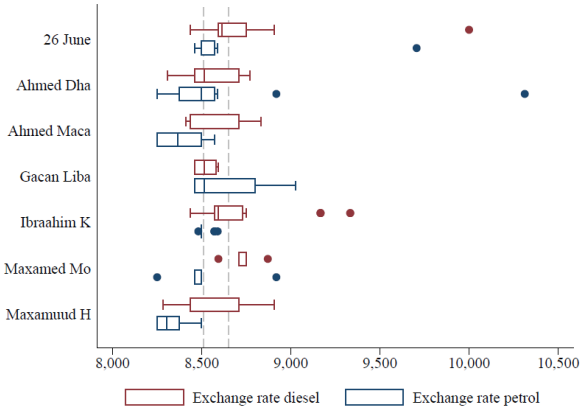
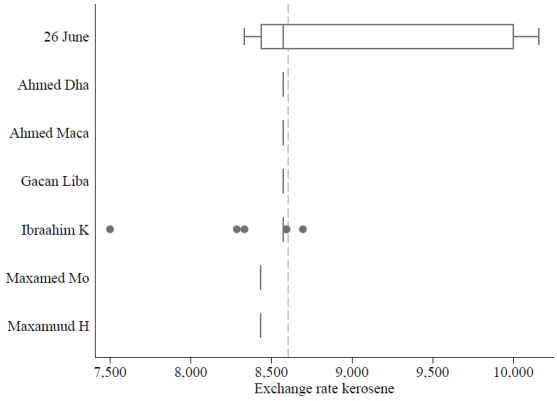


Figure 6. Box plot of kerosene exchange rates by district. Round 1.



4.2. Evolution of prices and exchange rates.

As mentioned in the introduction, Survey Round 2 aimed at monitoring the evolution of fuel retail prices and exchange rates. Two districts were selected for this exercise: Ahmed Macallin and Gacan Libaax. The time span between Round 1 and Round 2 was three weeks.

4.2.1. Prices

Table 4 below shows the comparison of fuel retail price variables between Round 1 and Round 2. The prices of petrol and diesel decreased in 10% and 7% respectively. The standard deviation increased significantly, 40% for petrol prices and 47% for diesel prices. Moreover, minimum and maximum values have both declined. Graph 7 and Graph 8 help visualise the change in the distribution of both variables.

These changes are a potential sign of the effect that the reduction in fuel import prices is having on fuel retail prices. In this regard, the reduction in fuel import prices is not commensurate with the reduction in fuel retail prices in the fuel stations of the two districts surveyed. This might be due to price mark-ups brought about by intermediate activities such as transport. Fuel stations' market power might also be playing a role. While this survey provides interesting preliminary insights, more evidence is needed to determine how retail prices react to import prices' fluctuations.

In addition, it is worth highlighting the increase in fuel prices' variance. This may be evidence of the heterogeneity in fuel stations' reactions to changes in fuel import prices. In other words, there is some variation regarding how fuel stations have adjusted retail prices (i.e. speed of adjustment and price level). The graphs below indicate that this is probably explained by the lag in adjusting prices downwards of some fuel stations, which are still charging pre-COVID-19 crisis prices.

Table 3. Summary statistics of price variables. Petrol and diesel. Comparing Round 1 and Round 2.

	Petrol		Diesel		Change (Round 1 – Round 2)	
	Round 1	**Round 2**	**Round 1**	**Round 2**	**Petrol**	**Diesel**
Observations	20	24	20	23	-	-
Mean	6660	6025	5420	5030.4	-10%	-7%
Standard Dev.	99.5	139.1	95.1	139.6	40%	47%
Min	6500	5800	5300	4800	-11%	-9%
Max	6800	6500	5700	5500	-4%	-4%

Figure 7. Histogram of petrol prices by survey round.

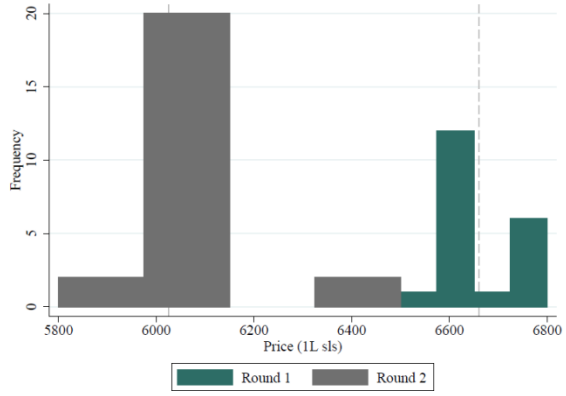
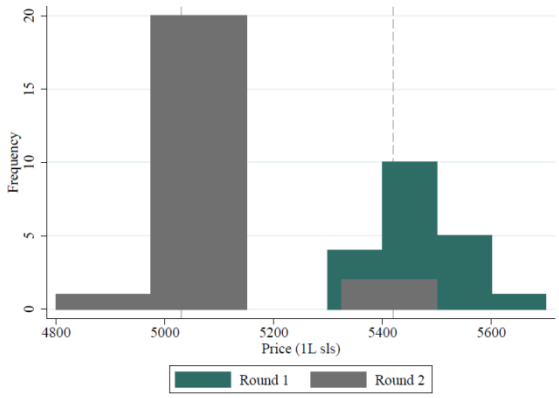


Figure 8. Histogram of diesel prices by survey round.



4.2.2. Exchange rates

Table 5 shows the evolution of the exchange rates used by fuel stations. The data seem to show different trends for petrol and diesel prices. While the average exchange rate applied to petrol sales has increased in 3%, the average exchange rate for diesel has decreased in 4%. Similar to fuel prices, the variance of both diesel and petrol exchange rates has increased significantly, which may also be indicating differences in price-setting mechanisms across fuel stations. Again, trends differ regarding minimum and maximum values. Minimum values have increased in petrol exchange rates and decreased in diesel exchange rates. Maximum values have increased in petrol exchange rates and decreased in diesel exchange rates[5].

Table 4. Summary statistics of exchange rates. Petrol and diesel. Comparing Round 1 and Round 2.

	Petrol		Diesel		Change (Round 1 – Round 2)	
	Round 1	**Round 2**	**Round 1**	**Round 1**	**Petrol**	**Diesel**
Observations	20	24	13	23	-	-
Mean	8428.7	8718.7	8584.2	8277.5	3%	-4%
Standard Dev.	187	408.1	140.2	256.6	118%	83%
Min	8250	8571.4	8412.7	7142.9	4%	-15%
Max	9027.8	10000	8833.3	8461.5	11%	-4%

[5] The difference between petrol and diesel exchange rates' trends is puzzling. The underlying reason might be the item non-response rate for diesel exchange rates in Round 1.

Figure 6. Histogram of petrol exchange rates by survey round

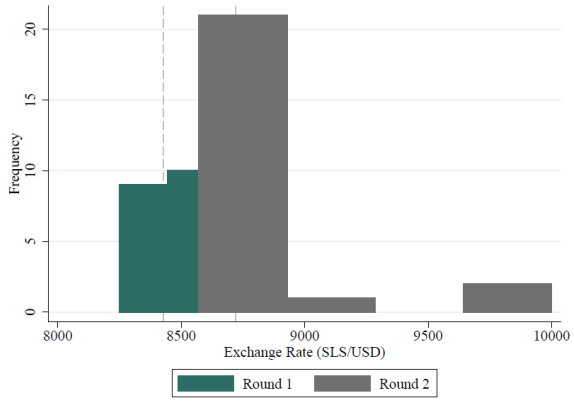
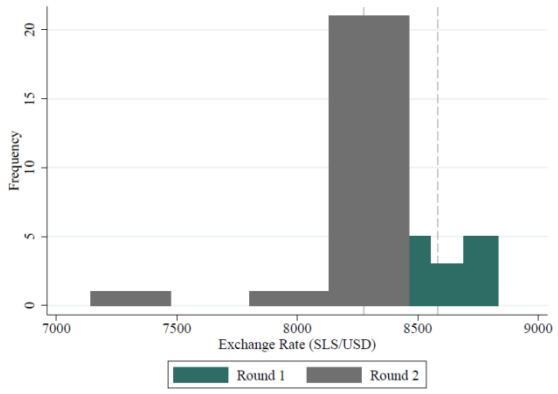


Figure 5. Histogram of diesel exchange rates by survey round



5. Summary

The present survey aimed at improving the MoTIT's knowledge of the state and evolution of fuel retail prices and exchange rates in Hargeisa. This follows recent fuel price fluctuations in international markets, which in Somaliland has translated into a reduction of petrol and diesel import prices of 23% and 11% respectively. This change is significantly higher than past months' energy inflation rates. Given Somaliland's reliance on fuel imports for energy supply, sudden changes in fuel prices can have an important impact on Somaliland's economy.

Within this context, the present survey has shed light on the state of fuel prices and exchange rates in 7 districts of Hargeisa. In sum, the evidence shows that in March the average price of petrol was 1300 SLSH/L greater than that of diesel, and the range of fuel retail prices charged by fuel stations was generally small except for kerosene, with prices ranging from 5000 to 7000 SLSH per litre. Petrol and diesel prices did not differ substantially across districts. Regarding exchange rates, the average exchange rate applied to fuel products' sales was very close to the market exchange rate of 1 USD = 8500 SLSH. Interestingly, some fuel stations applied different exchange rates to petrol and diesel products.

The second survey round analysed the evolution of petrol and diesel prices in Ahmed Macallin and Gacan Libaax districts over a three weeks' time span. The results show a reduction in average petrol and diesel prices of 10% and 7% respectively. This, in turn, reduced the difference in the average price between these two products, although petrol is still more expensive than diesel. The decrease in fuel retail prices was not commensurate with the reduction in fuel import prices. The price differences between fuel stations is now greater, probably due to the differences in fuel station's price adjustment processes. Exchange rates (SLSH/USD) applied to petrol sales have on average increased, while diesel exchange rates show an opposite trend.

The results presented in this survey provide interesting insights that will help inform policy responses to the COVID-19 crisis. In this regard, further evidence is needed in order to expand the MoTIT's knowledge of the links between the virus-driven crisis and the evolution of fuel retail prices and exchange rates in Hargeisa.

Snapshot for the Fuel Stations of the survey